This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1-24 (canceled).

25(new). A method of enhancing electrical conductivity of a conductive polymer by using field effect control which comprises the following steps:

(a) subjecting a substrate surface to a microwave plasma field treatment to facilitate the conductive polymer monomer, dimer, oligomer or polymer being positional absorbed on the substrate;

(b) homogeneously coating the plasma treated substrate surface with a conductive polymer solution while applying a field functional control to form a positional order stacking molecular structure for a conductive polymer film; and then

(c) employing a molecular structure ordered field control and a self-stacking field control by subjecting the coated substrate to an electromagnetic combination field to maintain and to strengthen the position and orientation ordered and stacking molecular structure of the conductive polymer to control and to increase the electrical conductivity of the conductive polymer.

26(new). A method of enhancing electrical conductivity for the conductive polymer by use of field effect control of claim 25 wherein the conductive polymer is polyaniline, polypyrrole, or polythiophene.

27(new). A method of enhancing electrical conductivity for the conductive polymer by use of field effect control of claim 25 wherein the power of the microwave field in step (a) is >1 watts, the current of the electrical field is >0.1 amperes, and the magnetic field is >500 gauss.

28(new). A method of enhancing electrical conductivity for the conductive polymer by use of field effect control of claim 25 wherein the plasma field of (a), contains an excited plasma gas which is oxygen, argon, hydrogen, carbon tetrafluoride, or other activated gas.

29(new). A method of enhancing electrical conductivity for the conductive polymer by use of field effect control of claim 25 wherein in the homogenous coating with field functional control in step (b), the field is microwave field, electrical field, magnetic field, or fluid force field individually, or two combination, or three combination, or total combination mechanism function.

30(new). A method of enhancing electrical conductivity for the conductive polymer by use of field effect control of claim 25 wherein the homogenous coating with field functional control in step (b), is a containing electrical field, magnetic field, or fluid force field combinational field function; using a coating tool and coating control system to obtain a coating thickness which is in the range of 100Å ~ 100 μm.

31(new). A method of enhancing electrical conductivity for the conductive polymer by use of field effect control of claim 25 wherein the molecular structure ordered and self-stacking field control in step (c), is the combination of electrical field and magnetic field, or a combination of electrical field, magnetic field, and fluid force field.

32(new). A method of enhancing electrical conductivity for the conductive polymer by use of field effect control of claim 26 wherein the polymer is a substituted alkyl, alkoxy, aryl, hydroxyl, amino, or halogen substituted aniline polymer.

33(new). A method of enhancing electrical conductivity for the conductive polymer by use of field effect control of claim 26 wherein an oxidant is applied to the

film in step (c) which oxidant is potassium bichromate, ammonium persulfate, hydrogen peroxide, ceric sulfate, or chromic chloride.

34(new). A method of enhancing electrical conductivity for the conductive polymer by use of field effect control of claim 26 which further comprises homogeneously coating onto the polymer film formed in step (c) with a blending agent which is selected from the group consisting of a series of aromatic protic acids.

35(new). A method of enhancing electrical conductivity for the conductive polymer by use of field effect control of claim 25 wherein the conductive polymer is the polyaniline structural composition comprising aniline, oxidant, and blending agent.

36(New) A method as claimed in claim 32 wherein the polymer is formed from an aniline compound which is 2- or 2,5-substituted methyl anilines, 2- and 2,5-substituted ethyl or propyl anilines, 2-substituted methoxy or ethoxy anilines, 4-phenyl substituted anilines, 2-chloro, 2-fluoro substituted anilines, 2- and 4-amino substituted anilines, or 2- and 4-hydroxyl substituted anilines.

37(New) A method as claimed in claim 36 wherein hydrogen atoms on the nitrogen position of the aniline rings are substituted by methyl, propyl, butyl, or phenyl groups.

38(New). A method of enhancing electrical conductivity for conductive polymer by use of filed effect control of claim 34 wherein the blending agent is benzenesulfonic acid (BSA), dodecylbenzenesulfonic acid (DBSA), p-toluenesulfonic acid (PTSA), nitrobenzenesulfonic acid, naphthalenesulfonic acid, or 10-camphor-sulfonic acid.

39(new). A method of enhancing electrical conductivity for conductive polymer as claimed in claim 27 wherein the conductive polymer is polyaniline.